

## Consent form

### Background

Body odor has long been a personal topic, which can at the same time affect social concept of a person. It has been studied and proven that the major cause of unpleasant body odor, besides personal hygiene, is the microbiome, which represents the different bacteria populations living on your skin. These bacterias feed on the compounds found in sweat and release odorous molecules that are responsible for the bad smell.

Each individual carries different genetic information, which gives microbes different external environment, giving birth to a diversity of their population. In addition, the genetic information carried by bacterias also affects the survival of each other. Among tens of thousands of bacterias, there are naturally mutated strains that are odorless and harmless to human beings. We believe these mutants can be found on any person at different percentages. Our project aims at building a database of bacteria population under armpits and match the information to the smell of the individual. The ultimate goal is to identify *wild type variants (the mutants)* of odorous bacteria that have *lost their bad odor* due to a natural mutation and to use these natural variants to create probiotic cosmetics, such as deodorant.

For the purpose of building a comprehensive database and to involve the public in science discovery, we invite people who are interested to participate by providing us their swear samples, but also to smell different odors we will provide. This project is part of the work from the international Genetically Engineered Machine (iGEM) Paris Bettencourt team.

### Purpose

There are three purposes in this project. First, we hope to increase public awareness and involvement in bioengineering and synthetic biology through being part of a research.

Second, we are trying to build a database of body odor and its intensity with the matching microbe population.

Third, in the process of building the database, we hope to discover the natural variant of odorous bacteria that does not produce unpleasant smell. This can be related to the genetic information carried by the host, which may further relate to personal information. These mutated bacterias can be used to produce low-cost probiotic cosmetic products without actually increasing the density of skin microbes, as what the current deodorants on the market do.

## Procedure

Our research will be done at the « Centre de recherche Interdisciplinaire ». You have different ways to participate to our study :

- you can collect your sweat using our kit that you send back to us. We will concentrate your odor and send it anonymously to other people that will rate it. You will be able to see how people rate your smell on our online platform.
- you can smell different odors from a kit that we will send you, and fill a form on our online platform. The aim is to rate and identify the smell of the odors, but also to guess personal informations related to the person who is giving its smell sample. You will receive the anonymous informations of this person to see if you guessed right !
- You can both send us your sweat and smell samples.

We ask you not to wear any deodorant the day you collect your sweat, this would alter the smell and the microbiome flora. More instructions are given in the kits on the « How to proceed » paper.

What will happen to the samples/information in this project :

- we will replace your name and any other traditional identifiers by code numbers so that it can be linked to the information we get from sequencing/you filling the form.
- we will place the coded information in open access scientific databases available over the internet to anyone using our platform, whether they are scientists or citizen scientists just like you.
- Your samples will be used for 2 things : sequencing and concentrating the odor
- before sequencing, we will extract the genetic material from your microbiome (DNA).
- we will send this DNA to a special laboratory that can sequence it (reading out the complete genetic code in each sample).
- the sequencing company guarantees the strict confidentiality of all data and information resulting from this project. All data, results and materials remain the sole property of the customer (us) and GATC (the sequencing company) will not acquire any intellectual rights resulting from information or materials generated as a result of this project.
- After the project is over, any remaining part of your sample will be destroyed.

## Potential Risks

Physical risks:

There is minimal physical risk involved in this study. Participants may be allergic to the cotton pad we are using for sample collecting and get irritating skin. However, the possibility is extremely low. Smelling the sample may cause short-term physical reaction, including headache and nausea, which should not have long-term effect.

Social and psychological risks:

As we don't consider this to be a traditional study, participants may be questioned by friends or family members on why they are involved. Although it is physically comfortable to wear the cotton pads, it might be socially awkward to some people. It can also be disheartening to get an undesirable result of the participant's own body odor.

Exposure of personal information:

As researchers, we will protect the personal information of the participants, including the smell score, traditional identifiers and genetic information. Although we are looking for bacterial DNA, there are great chances we gather human DNA alongside bacterial DNA when collecting sweat. Human DNA is not our goal and won't be used in our project. However, under the situation that our system is intentionally hacked or we are required legally to provide the information, they may be exposed unexpectedly.

## **Potential Benefits**

At current stage, there is no direct benefit to the participants, except for the excitement of participating in new application researches and getting to know more about their body odor and skin microbe, which can be potentially related to their health situation.

However, in a long run, the involvement may help the creation of probiotic cosmetic products that can eliminate body odor in a more healthy and cheaper way.

## **Alternative Participation**

You can participate in three ways: send us your sweat sample, volunteer to smell different odors, ones we create using micro-organisms and others from sweat people send us, or you can do both. For participants who only smell the samples, no personal information will be collected.

## **Voluntariness**

There is no payment involved in this study. Participants are voluntary and wouldn't be compensated even if a cosmetic product is made and sold on the market in the future.

The researchers of this study will take charge of the shipping costs. Financially, there are no costs or benefits for the participants.

## **Rights to Withdraw**

Participants have the rights to withdraw from the study at any point of time in the process. Once the individual decides to withdraw, the sample will be destroyed, all personal information will be deleted from the record and any online data related to this person will be taken down.

## **Confidentiality**

Traditionally personal identifiers, such as name and address, will only be available to the researchers. Before we process the samples and before we send them out to other participants for smelling, the information will be replaced by numbers. However, the personal informations will be published in our online database afterward and will be accessible by the public.

The personal information, including DNA sequence, collected by the researchers will not be provided to other agents, unless legally required and mandatory. If such situation happens, we will notify the participants before handing in the information. The information would also not be used for other research.

## **Contact Information**

Principal Investigator of the iGEM Paris Bettencourt team:

Advisor of the iGEM Paris Bettencourt team:

Author of the consent form:

People carrying out this study: